

## CLAIMS

- 5 1. A process for the chemical treatment of lignocellulose materials, in particular of at least one piece of wood, **characterized in that** said materials are subjected to impregnation by a chemical agent comprising hydrocarbonaceous chains, this agent being chosen from mixed anhydrides, except for the mixed anhydride of acetic/benzoic acid, said agent being suitable for providing covalent grafting of a plurality of  
10 hydrocarbonaceous chains to said materials.
2. The process as claimed in claim 1, **characterized in that** the grafting is carried out by a process for the esterification of said lignocellulose materials using a chemical agent chosen from organic anhydrides.
3. The process as claimed in claims 1 or 2, **characterized in that** the  
15 treatment is carried out at a temperature between ambient temperature and 150°C and preferably between 100 and 140°C.
4. The process as claimed in claim 1, **characterized in that** the mixed anhydride comprises a first hydrocarbonaceous chain R and a second hydrocarbonaceous chain R<sub>1</sub>.
- 20 5. The process as claimed in claim 4, **characterized in that** R represents a C<sub>2</sub> to C<sub>4</sub> carboxylic acid and R<sub>1</sub> is a C<sub>6</sub> to C<sub>24</sub> fatty acid, these acids being saturated or unsaturated.
6. The process as claimed in claim 4, **characterized in that** R<sub>1</sub> represents a C<sub>2</sub> to C<sub>4</sub> carboxylic acid and R is a C<sub>6</sub> to C<sub>24</sub> fatty acid, these acids being  
25 saturated or unsaturated.
7. The process as claimed in claim 1, **characterized in that** the mixed anhydride is the mixed anhydride of acetic/octanoic acids.
8. The process as claimed in one of claims 1 to 7, **characterized in that** the impregnation is carried out in the presence of a basic catalyst.
- 30 9. The process as claimed in one of claims 1 to 7, **characterized in that** the impregnation is carried out in the presence of a neutral catalyst.
10. The process as claimed in one of claims 1 to 7, **characterized in that** the impregnation is carried out in the presence of a weak acid catalyst.
11. The process as claimed in one of claims 1 to 7, **characterized in that** the  
35 impregnation is carried out in the presence of a catalyst.
12. The process as claimed in one of claims 1 to 7, **characterized in that** the impregnation of the lignocellulose materials is carried out by a dipping process.

13. The process as claimed in one of claims 1 to 7, ***characterized in that*** the impregnation of the lignocellulose materials is carried out by a spraying process.
- 5 14. The process as claimed in one of claims 1 to 7, ***characterized in that*** the impregnation of the lignocellulose materials is carried out in an autoclave.
15. The process as claimed in one of claims 1 to 14, ***characterized in that*** it is carried out on a piece of wood, the species of which is chosen from in particular oak, pine, fir, curupixa or eucalyptus.
- 10 16. A piece based on fibers of lignocellulose material, in particular a piece of wood, obtained by the process as claimed in any one of the preceding claims, ***characterized in that*** the lignocellulose fibers are homogeneous and exhibit a smoothed appearance.
- 15 17. A piece based on fibers of lignocellulose material, in particular a piece of wood, obtained by the process as claimed in any one of claims 1 to 15, ***characterized in that*** the degree of absorption is substantially in the region of 3.5%.
- 20 18. A piece based on fibers of lignocellulose material, in particular a piece of wood, obtained by the process as claimed in any one of claims 1 to 15, ***characterized in that*** the degree of swelling is substantially in the region of 3.5%.